

WASHINGTON DEPARTMENT OF ECOLOGY
ENVIRONMENTAL ASSESSMENT PROGRAM
FRESHWATER MONITORING UNIT
STREAM DISCHARGE TECHNICAL NOTES

STATION ID: 29F050
STATION NAME: Bear Creek at Mouth
WATER YEAR: 2011
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Introduction

Watershed Description

Ecology's telemetry stream gage on Bear Creek watershed, located at river mile 1.0, is mainly on Forest Service land that is mostly forested with some logging being conducted. Bear Creek channel is made up of bedrock with medium to large boulders and small patches of gravel and cascading water.

Gage Location

Gage is about 80 feet upstream from a private bridge on the left bank. Staff gage and laser level readings were made on a biweekly basis for the duration of the period of record. Flow measurements were taken upstream 150 ft. above gage house.

Table 1.

Drainage Area (square miles)	15
Latitude (degrees, minutes, seconds)	45 45 50
Longitude (degrees, minutes, seconds)	121 49 32

Discharge

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	66
Median Annual Discharge (cfs)	42
Maximum Daily Mean Discharge (cfs)	517
Minimum Daily Mean Discharge (cfs)	2.8
Maximum Instantaneous Discharge (cfs)	639
Minimum Instantaneous Discharge (cfs)	2.5
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	159
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	3.5
Number of Days Discharge is Greater Than Range of Ratings	5
Number of Days Discharge is Less Than Range of Ratings	0

Note: Statistics displayed in Table 2 may not include values in which the predicted discharge exceeds the range of ratings.

Narrative

Five days exceeded the rating table, 16 days were above rating but are reliable extrapolations, and 16 days are estimated data from another station.

Error Analysis

Table 3. Error Analysis Summary.

Logger Drift Error (% of discharge)	4
Weighted Rating Error (% of discharge)	15.5
Total Potential Error (% of discharge)	20

Rating Table(s)

Table 4. Rating Table Summary

Rating Table No.	1	2	
Period of Ratings	6-18-08 to 03-10-11	03-10-11 to 10-02-12	
Range of Ratings (cfs)	0.85 to 753	0.00 to 753	
No. of Defining Measurements	20	12	
Rating Error (%)	14.5	16	

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

Narrative

Eight discharge measurements were taken ranging from 3.2 cfs to 376 cfs. PZF values for Table 2 was 2.43 ft. on 07-19-11.

Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	3.44
Maximum Recorded Stage (feet)	8.73
Range of Recorded Stage (feet)	5.29
Number of Un-Reported Days	5
Number of Days Qualified as Estimates	16
Number of Days Qualified as Unreliable Estimates	0

Narrative

Sixteen days were estimated based on other stations; 27 days were above rating but reliable extrapolations; and five days exceeded the rating table .

Modeled Discharge

Table 6. Model Summary

Model Type (Slope conveyance, other, none)	
Range of Modeled Stage (feet)	
Range of Modeled Discharge (cfs)	
Valid Period for Model	
Model Confidence	

Surveys

Table 7. Survey Type and Date (station, cross section, longitudinal)

Type	Date
All	2009

Activities Completed

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